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Family Coryphaenidae

Body elongate, greatly compressed, more or less fusiform in young, deeper just behind head with age. Head moderate, compressed. Snout compressed. Eye advanced, small. Mouth large, lower jaw projecting. Maxillary reaches below eye. Teeth conic, small, in bands in jaws, on palate and tongue. Nostrils together. Interorbital elevated, greatly so in adult male. Gill membranes free from isthmus. Gill rakers lanceolate. No pseudobranchiae. Branchiostegals 7. No air bladder. Vertebrae 30 to 33. Pyloric appendages very numerous. Body covered with very small scales. Lateral line

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complete, axial on side. Dorsal single, many rayed, extends along back from nape to caudal fin and not greatly elevated. Anal similar, much shorter, without spines. Caudal widely forked. Pectoral short, falcate. Ventral thoracic.

Large fishes of the high seas in warm regions, noted for their brilliant and changeable colors.

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Genus Coryphaena Linnaeus

Coryphaena Linnaeus, Syst. Nat.,
ed. 10, pt. 1, p. 261, 1758. (Type
Coryphaena hippurus Linnaeus,
designated by Jordan and Gilbert,
Bull. U. S. Nat. Mus., No. 16, p. 454,
1882.)

Coryphaene Forster, Cat. Animals
North America, p. 20, 1771. (Type
Coryphaena hippurus Linnaeus.)

Hippurus Klein, Gesell. Schauplatz,
vol. 7, p. 788, 1779. (Type Coryphaena
hippurus Linnaeus, tautotypic.)
(Inadmissible.)

Depth $3\frac{4}{5}$ to 4; head $3\frac{1}{5}$ to $3\frac{2}{5}$, width $2\frac{1}{8}$ to $2\frac{1}{5}$. Snout $2\frac{2}{3}$ to 3 in head; eye $3\frac{7}{8}$ to $4\frac{1}{4}$, $1\frac{1}{3}$ to $1\frac{7}{8}$ in snout, $1\frac{1}{5}$ to $1\frac{1}{4}$ in interorbital; maxillary reaches to or $\frac{1}{5}$ in eye, expansion $1\frac{2}{5}$ to $1\frac{3}{4}$ in eye, length $2\frac{2}{5}$ to $2\frac{1}{2}$ in head; barbels $1\frac{2}{3}$ to $1\frac{3}{4}$, not quite reaching opposite hind preopercle edge; -teeth in villiform bands in jaws and on palatines; interorbital $3\frac{7}{8}$ to 4, slightly depressed medially. Gill rakers 8+20, lanceolate, $1\frac{1}{5}$ in gill filaments, which $1\frac{1}{4}$ in eye; 4 lowest as rudiments.

Scales 34 or 35 in lateral line to caudal base and 3 more on latter; 3 above, 7 below, 17 predorsal ~~below~~ forward above front nostril, 3 rows on cheeks with rather broad naked flange. Scales with 5 or 6 basal radiating striae; 85 to 100 short apical denticles,

Caranx omorus Lacépède, Hist. nat.
Poiss., vol. 3, p. 82, 1802. (Type
Scomber pelagicus Linnaeus,
designated Jordan and Evermann,
Genera of Fishes, pt. I, p. 61, 1917.)

Coryphaus (Commerçon) Lacépède,
Hist. nat. Poiss., vol. 3, p. 186,
1802. (Type Coryphaena hippurus
Linnaeus, monotypic.) (Inadmissible.)

Lepimphis Rafinesque, Car. Nuov.
Animal. Sicil., p. 33, 1810. (Type
Lepimphis hippuroides Rafinesque,
designated by Jordan and Evermann,
Genera of Fishes, pt. I, p. 79, 1917.)

Lampugus Cuvier, Hist. nat. Poiss.,
vol. 9, p. 317, 1833. (Type Scomber
pelagicus Linnaeus, designated by
Jordan and Evermann, Genera of
Fishes, pt. I, p. 143, 1917.)

Upeneus moluccensis Bleeker, Nederl.

Tijdschr. Dierk., vol. 1, 1865, p. 281
 (reference); vol. 4, 1874, p. 118 (China);
 Verhandel. Kon. Akad. Wetensch.
 Amsterdam, vol. 15, no. 3, 1875, p. 8
 (Celebes, Tumbawa, Amboina);
 Atlas Ichth. Ind. Néerland., vol. 9,
 1877, pl. (2) 392, fig. 1.

Upeneus dubius (part) Schlegel,
 Fauna Japonica, Poiss., pts. 2-4, 1843,
 pl. 11, fig. 3.

Upeneoides dubius Kner, Reise Novara,
 Fische, 1865, p. 67 (Australia).

Upeneoides fasciolatus Day, Proc.
 Zool. Soc. London, 1868, p. 151. Madras.

Upeneoides sulphureus (not Cuvier) Day,
 Fisher of India, pt. 1, 1876, p. 120 (part).

? Upeneoides roseus Castelnau, (Res. Fishes
 Australia) Victoria Office Rec. Phila-
 delphia Exhib., 1875, p. 11. Cape York. ⁱⁿ
macleay, Proc. Linn. Soc. New South Wales, vol.
 5, 1861, p. 403 (Cape York).

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Ectenias Jordan and Thompson,
Mem. Carnegie Mus., vol. 6, no. 4,
p. 241, ^{Sept.} 1914. (Type Ectenias
brunneus Jordan and Thompson,
orthotypic.)

Upeneoides moluccensis Herre and
Montalban, Philippine Journ. Sci., vol.
36, no. 1, May 1928, p. 101 (Manila,
Balayan Bay Pinamalayan, Tagbilaran,
Larena; Hong Kong) (error).

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Body more or less fusiform in young, becomes deeper just behind head in adult, forms elevated crest on skull. Head well compressed, rather attenuated in young, front profile nearly vertical in adult male. Snout little wider than long. Eye slightly elongate. Mouth cleft wide, slightly curved and inclined. Villiform teeth in jaws, on vomer and palatines, also on tongue. Interorbital convexly elevated. Lower gill rakers 9 or 10. Scales minute, imbedded. Head naked, except cheeks, postocular and temporal regions. Lateral line little curved or wavy at first. Dorsal begins on head over eye, slightly

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elevated in front, long, extends back on caudal peduncle. Anal similar, much shorter. No distinct dorsal or anal spines. Caudal long, deeply forked. Pectoral falcate. Ventral well developed, received in groove in abdomen.

Fishes of the high seas in temperate and tropical regions. Of the many nominal species described, most all are really to be referred to two.

Analysis of Species

- a.¹ Eye $3\frac{1}{2}$ to 4 in supraorbital space; d. 58 to 30. hippurus.
- a.² Eye $2\frac{1}{2}$ in supraorbital space; d. 53 to 58. equiselis.

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and dusky, posteriorly pale.
Pectoral whitish. Ventral blackish.
Only known from the type.

51946 U. S. N. M. Negros Island.

Dr. Bashford Dean. Length 18 mm.

Coryphaena hippurus Linnaeus

Coryphaena hippurus Linnaeus, Syst.

Nat., ed. 10, pt. 1, p. 261, 1758 (type locality, Pelagic in open sea). —

Osbeck, Reise Ost Ind. China, p. 365, 1765 (Java), p. 403 ("der Grassee"). — Linnaeus, Syst. Nat., ed. 12, pt. 1, p. 446, 1766 (copied). —

— Forskal, Descript. Animal., p. ~~XIX~~, 1775 (Malta). — Block, Naturges. Ausland. Fische, vol. 2, p. 143, pl. 174, 1786 (no locality). —

Bonnaterre, Tabl. Ichth., p. 59, pl. 33, fig. 125, 1788 (the Ocean).

— Gmelin, Syst. Nat. Linnaeus, vol. 1, p. 1189, 1789 (Mediterranean; the Ocean). — Walbaum, Artedi

1746

6 or 7 transverse series of basal
elements; circuli fine.

$D. \frac{X}{\equiv} - \frac{I}{\equiv}, 26, \frac{I}{\equiv}$, second spine prolonged
filament equal to $1 \frac{4}{5}$ in entire length
of specimen, first branched ray $2 \frac{1}{2}$ in
head; $A. \frac{II}{\equiv}, 25, \frac{I}{\equiv}$, ^{second} first branched ray
 $3 \frac{1}{5}$; caudal $1 \frac{2}{3}$, slightly emarginate
behind; least depth of caudal peduncle
 $4 \frac{4}{5}$; pectoral $1 \frac{2}{3}$; ventral $2 \frac{3}{5}$.

Upper half of body ^{light} brown, lower
half paler to whitish. Iris silvery
white. Fins pale brownish.

11668 A.N.S.P. East Indies, Dr. H.C.

Wood. Length 195 mm.

Pisc., vol. 3, p. 97, 1792 (copied).

— Blumenbach, Handb. Naturg.,
p. 272, 1799. — Lacépède, Hist.
Nat. Poiss., vol. 3, pp. 172, 178,
1802 (all seas).

— Shaw and Nodder, Natural
Miscellany, vol. 7, pl. 242, 1796
(Mediterranean).

— Valenciennes, Hist. Nat. Poiss.,
vol. 9; p. 278, pl. 266, 1833 (Syracuse).

— Lichtenstein, Descript. Animal.
Forster, p. 155, 1844 (tropical Pacific).

— Günther, Cat. Fish. Brit. Mus.,
vol. 2, p. 405, 1860 (Cape Verde; Mauritius;
Madeira). — Playfair, Fishes of
Zanzibar, p. 66, 1866 (Zanzibar).

— Steindachner, Sitz. Ber. Akad.
Wiss. Wien, math.-naturw. Kl., vol. 57,
pt. 1, p. 370, 1868 (Santa Cruz de Tenerife;
Lagos; Malaga).

Monopriion Poey, Mem. Hist. Nat. Cuba,
vol. 3, 1860, p. 123. Type Monopriion
maculatus Poey, monotypic.

Lepidamia Gill, Proc. Acad. Nat.
Sci. Philad., 1863, p. 81. Type Amia
kalosoma Bleeker, monotypic.

Pristiapogon Klinzinger, Verh. zool. bot.
Gesell. Wien, 1870, p. 715. Type Lipogon
grenatus Valenciennes, monotypic.

Vincentia Castelnau, Proc. Zool. Acclim.
Soc. Victoria, vol. 1, 1872, p. 245. Type
Vincentia waterhousei Castelnau, monotypic.

Monosira Poey, Anales Soc. Espan. Hist. Nat.
Madrid, vol. 10, 1881, p. 326. Type Monosira
stahli Poey.

Fowleria Jordan and Evermann, Bull. U. S. Fish
Comm., vol. 23, pt. 1, 1903 (1905), p. 201.
Type Fowleria brachygramma Jenkins,
orthotypic.

(66)

— Klunzinger, Verh. zool. bot. Gesell. Wien,
vol. 21, p. 446, 1871 (Red Sea).

— Bleeker, Rech. Madagascar Pollen et
van Dam, pt. 4, p. 97, 1875 (reference).

— Day, Fishes of India, pt. 2, p. 248,
pl. 53, fig. 6, 1876 (Madras). — Steindach-
ner and Döderlein, Denks. Akad. Wiss. Wien,
math.-naturw. Kl., vol. 47, p. , 1883.

— Bleeker, Verh. Kon. Akad. Wet. Amsterdam,
vol. 18 (Mauritius), p. 18, 1879 (reference);
(Enum. Poiss. Japan), p. 66, 1879. —

— Klunzinger, Fische Roth. Meer., vol. 1,
p. 119, 1884. — Meyer, Anal. Soc. Espan. Hist.
Nat. Madrid, vol. 14, p. 27, 1885 (Macassar).

— Hystrom, Bih. Kon. Svensk. Vet. Akad.
Handl. Stockholm, vol. 13, afd. 4, no. 4,
p. 30, 1887 (Nagasaki). — Günther,
Rep. Voy. Challenger, vol. 3, pt. 2, p. 9,
1888 (1889) (Low Archipelago). — Day,
Fauna British India, Fishes, vol. 2,
p. 200, fig. 69, 1889.

Only known from the type.

No. 70251, 8. s. t. m. Rasa Island,

Mantaguin Island, Palawan. April 1,

1909. Length 37 mm.

— Goode and Bean, Oceanic Ichth., p.
209, 1895 (reference).

— Jordan and Snyder, Proc. U. S. Nat.
Mus., vol. 23, p. 353, 1900 (Tokyo);
Annot. Zool. Japon., vol. 3, p. 68, 1901
(reference).

— Jenkins, Bull. U. S. Fish Comm., vol. 22,
p. 447, 1902 (1904) (Honolulu). — Jordan
and Evermann, Bull. U. S. Fish Comm.,
vol. 23, pt. 1, p. 204, 1903 (1905) (Honolulu;
Hilo). — Knudgrass and Heller, Proc.
Washington Acad. Sci., vol. 6, p. 365, Jan.
31, 1906 (between Revillagigedo and
Clipperton; Cocos Island; Clarión Island).

— Kendall and Radcliffe, Mem. Mus. Comp. Zool., vol. 25, no. 3, p. 101, April 1912 (Lat. $9^{\circ}7'N.$, Lang. $85^{\circ}11'W.$). — Weber, Liboga Exped., vol. 57, Fische, p. 409, 1913 (Macassar).

— Fowler, Copeia, no. 112, p. 82, Nov. 29, 1922 (Hawaii). — Jordan and Snyder, Mem. Carnegie Mus., vol. 10, no. 1, p. 35, Dec. 1922 (Honolulu)..

— Barnard, Ann. South African Mus., vol. 21, pt. 2, p. 566, pl. 26, fig. 1, Oct. 1927 (Cape Seas; Table Bay; False Bay). — Fowler, Mem. Bishop Mus., vol. 10, p. 137, fig. 30 (young), 1928 (Honolulu).

- McCulloch, Austral. Mus. Mem.,
no. 5, pt. 2, p. 194, Sep. 10, 1929 (reference).
— Fowler, Mem. Bishop Mus., vol. 10,
no. 5, p. 325, 1931 (Honolulu).
- McCulloch, Fishes of New South Wales,
ed. 3, p. 54, pl. 23, fig. 196a, 1934.

Depth $2\frac{1}{5}$; head $2\frac{2}{5}$, width $2\frac{1}{2}$.
Snout $5\frac{1}{5}$ in head from snout tip; eye
4, much greater than snout or
interorbital; maxillary reaches
slightly beyond eye, expansion $1\frac{1}{2}$
in eye, length 2 in head; teeth
very minute, villiform, in bands
in jaws and on vomer, obsolete or
absent from palatines; interorbital
 $5\frac{1}{4}$, but very slightly convex; preopercle
with entire ridge and edge. Gill
rakers $3 + 11$, lanceolate, little
longer than gill filaments or $2\frac{1}{2}$ in
eye.

Scales 21 in lateral line to
caudal base and 2 more on latter,
2 above, 8 below, 6 predorsal, at
least row of large scales on cheeks;
head except cheeks and opercles

Coryphaena hippurus G. Bennett,
Gatherings Nat. Austral., p. 20,
1860 (lat. $35^{\circ}15' S.$, long. $25^{\circ}3' E.$).

Swainson, Nat. Hist. Animals, vol. 2,
p. 252, 1839 (reference).

Coryphaena hippurus hippurus
Skeranijagala, Ceylon Journ. Sci.,
vol. 18, pt. 1, p. 58, pl. 4, Dec. 22,
1933 (Ceylon).

to middle of side. Spinous dorsal
buff basally and most membranes
with dark brown terminally. Soft
dorsal - dark brown largely on
outer half of fin as 3 or 4
longitudinal still darker bands.
Anal with 5 or 6 irregular
longitudinal dark brown bands.
Caudal pale brown. Pectoral pale
brown, darker above. Ventral
grayish basally, terminally dark
brown with 7 or 8 waved gray
transverse bands, each edged with
dark line.

This species, restricted to the
Hawaiian sub-region, is very close
to Pseudupeneus trifasciatus, but differs at
once in the broad pale or yellowish
area below the spinous dorsal.

Scomber pelagicus Linnaeus, Syst.⁶⁶⁶
Nat., ed. 10, pt. 1, p. 299, 1758 (no
type locality). — Bonnaterre, Tabl.
Ichth., p. 141, 1788 (the Ocean). — Gmelin,
Hist. Nat. Linnaeus, pt. 1, p. 1336, 1789 (copied).

Caranx morosus pelagicus Lacépède,
Hist. Nat. Poiss., vol. 3, pp. ^{= 82, 83,} 26, 1802.
("en pleine mer").

Cyphla pelagica Schneider, Syst. Ichth.
Bloch, p. 341, 1801 (copied).

Coryphaena pelagica Günther, Cat.
Fish. Brit. Mus., vol. 2, p. 407, 1860
(reference).

back. Rose of flanks contrasted with white of abdomen. Large triangular red blotch at caudal base, somewhat dull like back. First dorsal reddish and marked obliquely with 3 brownish bands; first ray dusky; second dorsal paler, oblique bands deeper or bister, mottled with reddish. Caudal dull red, each lobe with 6 parallel longitudinal streaks, blackish at tip and reddish at base of fin. Barbels rosy basally, citron yellow terminally. Length 225 to 250 mm.

Coryphaena fasciolata Pallas,⁶⁶⁷
Spicil. Zool., vol. 8, pl. 3, fig. 2, 1770
(type locality, Amboyna). —
Bonnaterre, Tabl. Ichth., p. 60, pl.
34, fig. 129, 1788 (copied). —
Gmelin, Syst. Nat. Linnaeus, pt.
1, p. 1193, 1788 (copied). — Walbaum,
Artedi Pisc., vol. 3, p. 102, 1792.
(copied). — Forster, Fauna Indica,
p. 14, 1795. — Schneider, Syst.
Ichth. Block, p. 297, 1801 (copied).

Lampugus fasciolatus Valenciennes,
Hist. Nat. Poiss., vol. 9, p. 328, 1833
(copied). — Bleeker, Nat. Tijds.
Red. Indie, vol. 21, p. (50, 54) 66, 1860
(Cape of Good Hope).

Genus Amia Gronow.

Amia Gronow, Zoophylac., 1763, p. 80.
 Species non-binomial. Type - Amia
moluccensis Valenciennes, designated by
 Gill, Proc. Acad. Nat. Sci. Phila., 1862,
 p. 237.

Apogon Lacépède, Hist. Nat. Poiss., vol. 3,
 1802, p. 411. Type Apogon ruber Lacépède,
 monotypic.

Astorhinus Lacépède, Hist. Nat. Poiss.,
 vol. 4, 1802, p. 23. Type Astорhinus fleurieu Lacépède,
 monotypic.

Dipterodon Lacépède, Hist. Nat. Poiss., vol.
 4, 1802, p. 167. Type Dipterodon hexacanthus
Lacépède, designated by Jordan and Evermann,
 Genera of Fishes, vol. 1, 1917, p. 63.

Macrolepis Rafinesque, Analyse de la
 nature, 1815, p. 89. Type Apogon ruber
Lacépède. Macrolepis Rafinesque proposed
 to replace Apogon Lacépède.

Coryphaena chrysurus Lacépède, Hist.

Hist. Nat. Poiss., vol. 2, pp. 187, 188, fig. 2, 1799; vol. 3, pp. 174, 187, 1802 (type locality), Lat. $16^{\circ}S.$, long. $170^{\circ}W.$, Pacific Ocean, Great Equatorial Ocean).

— Cuvier, Hist. Nat. Poiss., vol. 9, p. 309, 1833 (Pondicherry).

— Bleeker, Verh. Batavia. Genoot. (Nat. Ichth. Bengal), vol. 25, p. 46, 1853 (reference). — Guichenot, Notes de la Réunion, vol. 2, p. 26, 1862. — Douan, Mém. Soc. Sci. Cherbourg, ser. 2, vol. 5, p. 106, 1870 (Seychelles).

Coryphaena scomberoides Lacépède, Hist. Nat. Poiss., vol. 3, pp. 174, 192, 1802 (type locality, South Sea, lat. $18^{\circ}S.$, long. $134^{\circ}W.$).

— Cuvier, Hist. Nat. Poiss., vol. 9, p. 315, 1833 (type).

— Bleeker, Act. Soc. Sci. Ind. Neerl., vol. 3, no. 4, p. 3, 1857-58 (Manado), p. 7 (Macassar). —

Günther, Cat. Fish. Brit. Mus., vol. 2, p. 407, 1860 (compiled).

spine weak.

Scales 38 in lateral line; 3 above, 7 below. Tubes in lateral line very arborescent posteriorly.

D. VII - I, 7, first spine highest and equals $\frac{2}{3}$ body depth, second subequal; A. 7; caudal deeply forked; pectoral equals first dorsal spine.

Back reddish, becoming white on abdomen. Large triangular reddish spot originally described not now apparent. First dorsal with 3 brownish longitudinal bands, second dorsal likewise banded. Caudal with 6 oblique streaks across either lobe. Length 305 mm.

(Day.)

Ceylon, Hawaii. Cuvier describes its colors from Reynaud:

Back red, dulled with time of hister. Head above deeper colored than

Coryphaena imperialis Rafinesque,
 Car. & Mus. Animal. Sicil., p. 33,
 1810 (type locality, Sicily).

Coryphaena immaculata Gigasiz,
 Pisc. Brasil. Spix, vol. 3, pl. 56,
 1829 (type locality, Brazil).

Coryphaena aguerea Lesson, Voy.
Cognille, Zool., pt. 2, p. 153, 1830

(type locality, lat. 23° S., long. 37° E.).

Coryphaena marcgravi Cuvier,
 Hist. Nat. Poiss., vol. 9, p. 301, 1833
 (type locality, Brazil) (on Marcgrave).
 Valenciennes

Coryphaena suevrii Cuvier, Hist. Nat.
 Poiss., vol. 9, p. 302, 1833 (type locality,
 not given [= New Jersey]).
 Valenciennes

Coryphaena dorado Cuvier, Hist. Nat.
 Poiss., vol. 9, p. 303, 1833 (type locality,
 Rio Janeiro; Antilles; Montevideo).

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Cope 129 Upeneus taeniopterus Cuvier
~~Upeneus taeniopterus Cuvier~~, Hist. Nat.
Pois., vol. 3, April 1829, p. 451. Trincomalee,
Ceylon.

Upeneoides taeniopterus Bleeker, Verhandel.
Batavia. Genootsch. (Nat. Ich. Bengal),
vol. 25, 1853, p. 34 (reference). $\frac{1}{2}$ Day,
Fishes of India, pt. 1, 1875, p. 122 (type);
Fauna British India, Fishes, vol. 2,
1889, p. 27. $\frac{1}{2}$ Steindachner, Denkschr.
Akad. Wiss. Wien, math.-naturwiss. Classe,
vol. 70, 1901, p. 487 (Honolulu). $\frac{1}{2}$ Fowler,
Mem. Bishop Mus., vol. 10, 1928, p. 227
(copied Day).

Depth $4\frac{3}{4}$ in total; head $4\frac{3}{4}$. Eye
 $4\frac{1}{2}$ in head, $1\frac{2}{3}$ in snout, $1\frac{1}{2}$ in
interorbital; barbels reach $\frac{1}{3}$ in eye;
teeth villiform in jaws, on vomer
and palate; interorbital flat; opercular

Coryphaena dolfin^m ^{Valenciennes} ~~Cuvier~~, Hist. nat.

Poiss., vol. 9, p. 305, 1833 (type locality, the Antilles).

Coryphaena virgata ^{Valenciennes} ~~Cuvier~~, Hist. nat.

Poiss., vol. 9, p. 308, 1833 (type locality, Martinique).

Coryphaena argentea ^r ^{Valenciennes} ~~Cuvier~~, Hist. nat.

Poiss., vol. 9, p. 314, 1833 (type locality, Sea of Coromandel; Gulf of Bengal).

— Bleeker, Verh. Batavia. Genoot.

(Nat. Ichth. Bengal), vol. 25, p. 46, 1853 (reference).

Coryphaena v lamingii ^{Valenciennes} ~~Cuvier~~, Hist.

nat. Poiss., vol. 9, p. 315, 1833 (type locality, East Indies) (on Vlaming).

Lumpenus siculus ^{Valenciennes} ~~Cuvier~~, Hist. nat.

Poiss., vol. 9, p. 323, 1833 (type locality, Sicily). *Coryphaena siculus* Swanson, Nat. Hist. Animal, vol. 2, p. 252, 1839 (reference).

6 examples. Sandakan Bay, Borneo,
Dutch East Indies. March 2, 1908.

Length 60 to 90 mm. Entire under surface
of body more or less sulphury yellow.
20235. Sandakan market. March 2,
1908. Length 113 mm.

53067 U.S.N.M. Cavite, Luzon. G.A.
Lung. Length 84 to 91 mm. 2 examples.
Type.

56138 U.S.N.M. Batan. Bureau of
Fisheries (no. 3201). Length 131 mm.
As Upeneoides sundaeicus.

Coryphaena nortoniæna Lowe,

Proc. Zool. Soc. London, (1839) p. 80,

(type locality, Madeira).

Coryphaena socialis F. J. Bennett,
Whaling Voy., p. 274, 1840 (type
locality, N. 27° Pacific; Equator in
166° W.).

Coryphaena globiceps de Kay, New
York Fauna, Fishes, vol. 2, p. 132,
pl. 10, fig. 29, 1842 (type locality,
New York Harbor).

Coryphaena japonica Schlegel, Fauna
Japonica, Poiss., pts. 7-9, p. 120, pl.
64, 1845 (type locality, Bays of coast of
south west Japan).

— Bleeker, Verh. Batavia. Genoot.
(Nat. Ichth. Japan), vol. 25, p. 15, 1853
(reference).

Crest 29

Upeneus subvittatus (Schlegel)¹²⁹⁴

~~taullus subvittatus Schlegel, Fauna
japonica, Poiss., pts. 2-4, 1843, p. 30.
Japan.~~

Upeneus subvittatus Richardson, Ichth.

China Japan, 1846, p. 219 (sea of China).

$\frac{1}{m}$ Snyder, Proc. U. S. Nat. Mus., vol. 32,
1907, p. 101 (Wakanoura).

Upeneoides subvittatus Elera, Cat. Fauna
Filipinas, vol. 1, 1895, p. 479 (Manila Bay,
Luzon). $\frac{1}{m}$ Jordan and Snyder, Annals
Zool. Japan., vol. 3, 1901, p. 83 (Nagasaki).

Coryphaena concolor Poey, Ann.
Soc. Espan. Hist. Nat. Madrid,
vol. 5, p. 134, 1876.

Ectenias brunneus Jordan and
Thompson, Mem. Carnegie Mus., vol. 6, no. 4,
p. 241, pl. 27, fig. 3, Sep. 1914 (type
locality, Misaki; Sagami).

sides paler, below golden rosy.
Dusky or violaceous dusky band,
wide as pupil, from eye to caudal
base medially, embracing lateral
line at caudal peduncle. Iris
yellowish. Barbels golden. Fins clear
rosy. Soft dorsal with 5 longitudinal
streaks. Upper caudal lobe with 4 or
5 oblique yellow bands, lower lobe
edged behind violaceous. Length
181 mm.

(Bleeker.)

East Indies. Reported by Károli
from Varangoon and Kobe, perhaps
the latter record pertaining to Upeneus
tragula? The present species known
chiefly by its narrow dark median
lateral band.

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Depth $4\frac{3}{5}$ to $4\frac{3}{5}$; head $4\frac{2}{5}$,
width $2\frac{1}{3}$ to $2\frac{1}{2}$. Snout 3 to $3\frac{1}{10}$ in
head from snout tip; eye $4\frac{1}{2}$ to 5,
 $1\frac{4}{5}$ to 2 in snout, 2 in interorbital;
maxillary reaches $\frac{1}{3}$ to $\frac{2}{5}$ in eye,
expansion 3 in eye, length $2\frac{1}{10}$
to $2\frac{1}{6}$ in head from snout tip;
interorbital $2\frac{4}{5}$ to $2\frac{7}{8}$, convexly
elevated. Gill rakers + 13,
lanceolate.

Scales minute, very numerous.
Lateral line complete, axial
along side.

D. 58 to 60, height $2\frac{7}{8}$ to 3
in total head length; A. 25 or 26,
height $3\frac{3}{5}$ to $3\frac{2}{3}$; caudal 4 to
 $4\frac{1}{8}$ in rest of fish, slender lobes
sharply pointed; least depth of
caudal peduncle 4 to $4\frac{1}{5}$; pectoral
in head

$1\frac{1}{2}$ to $1\frac{3}{5}$, rays II, 17; V, I, 5, fin
 $1\frac{1}{4}$ to $1\frac{2}{5}$ in head.

674

Back brown, lower half of body silvery white. Iris pale. Dorsal dark brown. Anal gray marginally, whitish basally. Caudal brownish. Sides below lateral line with some rather scattered and quite small dark brown spots. Pectoral olive or pale brownish. Ventral whitish basally, terminally blackish gray.

Red Sea, Zanzibar, South Africa, Madagascar, Seychelles, India, Ceylon, East Indies, China, Japan, New South Wales, Polynesia, Hawaii, also widely distributed in the Atlantic. Said to reach 1500 mm

U. S. N. M., No. 70727. Nagasaki,
Japan. Albatross Collection.
Length 378 to 442 mm. Two examples.

P. 4396.

Length 87 mm. D. 56.

D. 5561.

Length 32 to 79 mm. Nine examples.

U. S. N. M., one example. Lat. $25^{\circ}10'N$,
long. $166^{\circ}20'W$. November 3, 1907. Length
79 mm. D. 56.

(302a)

51904 to 51906 A.N.S.P. Orion, Luzon.
May 11, 1923. Rev. Joseph Clemens. Purchased.
Length 110 to 142 mm. These and all
following as Elpeneoides bensasi.

51907 A.N.S.P. Orion. May 11, 1923.

Rev. Joseph Clemens. Purchased. Length 47 mm.

52696 A.N.S.P. Orani, Luzon. April
28, 1923. Rev. Joseph Clemens. Purchased. Length 150 mm.

52697 A.N.S.P. Orion. April 28, 1923.

Rev. Joseph Clemens. Purchased. Length 93 mm.

52701 to 52706 A.N.S.P. Orion. May 11, 1923.

Rev. Joseph Clemens. Purchased. Length 90 to 164 mm.

52707 A.N.S.P. Orani. May 9, 1923.

Rev. Joseph Clemens. Purchased. Length 133 mm.

52708 A.N.S.P. Orion. May 11, 1923.

Rev. Joseph Clemens. Purchased. Length 132 mm.

Coryphaena equiselis Linnaeus

Coryphaena equiselis Linnaeus, Syst.
Nat. Ichth., ed. 10, pt. 1, p. 261, 1758
 (type locality, Pelagic in open seas);
 ed. 12, pt. 1, p. 447, 1766. —
Bonnaterre, Tabl. Ichth., p. 59, 1788
 (East Indies). — Gmelin, Syst.
Nat. Linnaeus, pt. 1, p. 1190, 1789
 (copied).

— Fowler, Proc. Acad. Nat. Sci.
 Philadelphia, p. 122, 1906 (July 26)
 (between Cape Verde Islands and
 Montevideo); Mem. Bishop Mus.,
 vol. 10, p. 137, fig. 31, 1928 (Easter
 Island to Galapagos).

Depth 4; head $3\frac{2}{3}$. Snout $2\frac{1}{2}$ in head; eye $4\frac{1}{10}$, $1\frac{4}{5}$ in snout; maxillary reaches $\frac{1}{8}$ in eye, expansion $1\frac{2}{3}$ in eye, length $2\frac{1}{2}$ in head; barbel $1\frac{1}{8}$; teeth pluriserial, small, equal; interorbital moderately high; preopercle edge entire.

Scales 38 in lateral line; 3 above, 6 below, 19 predorsal to snout tip, 3 rows on cheeks; preorbital scaled; front of soft dorsal and anal basally with small scales; caudal finely scaled over greater basal portion.

D. VIII - I, 9, second spine $1\frac{3}{5}$ in head, first ray $2\frac{1}{8}$; A. I, 2, first ray $2\frac{1}{8}$; caudal 1, forked, lobes pointed; least depth of caudal peduncle $2\frac{2}{5}$; pectoral $1\frac{2}{5}$; ventral $1\frac{1}{3}$.

Above violaceous or olivaceous,

Coryphaena equisetis Osbeck,
Reise Ost. Ind. China, p. 404, 1765
("der Grassee"). — Walbaum,
Artedi Pisc., vol. 3, p. 102, 1792
(copied).

— Günther, Cat. Fishes Brit. Mus.,
vol. 2, p. 407, 1860 (Atlantic); Journ.
Mus. Godeffroy, vol. 5, pt. II, p. 147,
pl. 93, fig. A, 1876 (between Tahiti
and Hawaiian Islands).

Cat. 179

1291

Upeneus sundicus (Bleeker)

Upeneoides sundicus Bleeker, Naturk.
Tijdschr. Nederl. Indië, vol. 8, 1855,
p. 411 (on Bleeker 1849).

(m) Günther, Cat. Fishes Brit. Mus., vol.
1, 1859, p. 399 (compiled). (m) Steindachner,
Sitz. Ber. Akad. Wiss. Wien, math.-
naturwiss. Klasse, vol. 60, pt. 1, 1870, p.
560 (Singapore). (m) Károlyi, Fermez.
Füzetek, Budapest, vol. 5, 1881, p. 156
(Varangoow; Kobe).

Upeneoides sundicus Herré and Montalban,
Philippine Journ. Sci., vol. 36, no. 1, May
1928, p. 98 (part). (Error.)

Upeneus sundicus Bleeker, Verhandel.
Rov. Akad. Wetensch. Amsterdam, vol. 15,
no. 3, 1875, p. 10 (Java, Madura, Sumatra,
Nias, Singapore, Banka, Celebes, Buru);
Atlas Ichth. Ind. Néerland., vol. 9, 1877, pl.
(4) 394, fig. 2.1

— Kendall and Radcliffe, Mem.
Mus. Comp. Zool., vol. 25, no. 3, p. 101,
April 1912 (lat. $13^{\circ}03' S.$, long. $112^{\circ}44.9' W.$;
lat. $2^{\circ}18.5' S.$, long. $90^{\circ}2.6' W.$; j.
lat. $14^{\circ}15' S.$, long. $115^{\circ}13' W.$; lat. $7^{\circ}15' N.$, long. $82^{\circ}8' W.$).

Genus Leamia Smith and Radcliffe
Leamia Smith and Radcliffe, Proc. U. S. Nat.
Mus., vol. 41, 1912, p. 441. Type Leamia
octospina Smith and Radcliffe, orthoypic.

Body deep, compressed. Head large.
Maxillary long, reaches beyond eye.
Bands of small villiform teeth in
jaws, few on vomer, none on palatines
and no distinct canines. Preopercle ridge
and edge entire. Lower gill rakers 11.
Scales ctenoid, 21 in lateral line to
caudal base. Lateral line complete.
Dorsal spines united basally at
intersection, spines 8 - and rayed fin
with spine and 9 rays. Anal with 2
spines and 8 rays. Caudal rounded.
Pectoral long.

679

Coryphaena hippurus var. equisetis
Schneider, Syst. Ichth. Bloch,
p. 295, 1801 (copied).

Coryphaena hippurus equisetis
Deraniyagala, Ceylon Journ. Sci.,
vol. 18, pt. 1, p. 59, text fig. 6, Dec.
23, 1933 (Gulifalu Island,
Maldives).

96

Neamia octospina Smith and Radcliffe.
Neamia octospina Smith and Radcliffe,
Proc. U. S. Nat. Mus., vol. 41, 1912, p. 441,
pl. 36, fig. 2. Rasa Island, Palawan.

680

Coryphaena aurata ^{Lacépède, Hist. Nat.}
Poisson, vol. 3, pp. 172, 185, pl. 10,
~~Car. naev. Dorsal, S. cil.~~, p. 33,
fig. 2, 1802 (on type locality) (on Plinier).
H. 810

Coryphaena azorica ^{Valenciennes} Cuvier, Hist.
Nat. Poiss., vol. 9, p. 306, 1833 (type
locality, 50 leagues west of Azores).

Coryphaena lessonii ^{Valenciennes} Cuvier, Hist.
Nat. Poiss., vol. 9, p. 306, 1833 (type
locality, lat. $23^{\circ} 22' S.$, long. $37^{\circ} W.$,
near Rio Janeiro).

Lamprinus neapolitanus ^{Valenciennes} Cuvier,
Hist. Nat. Poiss., vol. 9, p. 325, 1833
(type locality, Naples).
Coryphaena neapolitana ^{Günther, Cat. Fish. Brit. Mus.,}
vol. 2, p. 408, 1860 (copied).
Lamprinus punctulatus ^{Valenciennes} Cuvier, Hist.

Lat. Poiss., vol. 9, p. 327, 1833
(type locality, Equatorial Atlantic).
Coryphaena punctulata ^{Günther, Cat. Fish. Brit. Mus.,}
vol. 2, p. 408, 1860 (copied).

Coryphaena pravococco Cocco,
Coryphaena socialis ^{F. D. Bennett}
Narrat. Whaling Voyage, vol. 2, p. 274,
1840 (lat. $27^{\circ} N.$, long. $166^{\circ} W$ [near
Laysan]).

76639 U.S.N.M. Takao, Formosa.

Dr. F. Baker. Length 78 to 81 mm. 3 examples.

76641 U.S.N.M. Takao. Dr. F. Baker.

Length 68 to 103 mm. 17 examples.

76643 U.S.N.M. Takao. Dr. F. Baker.
Length 66 mm.

Harda immaculata Gray, Cat.
Fish. Gronow, p. 120, 1854
(type locality, "Mare Indico").

1289

Also spinous and soft dorsal each
with 2 or 3 dusky longitudinal
bands.

56436 U.S.N.M. Tokyo. Albatross
Collection. Length 102 to 155 mm. 2 examples.

57691 U.S.N.M. Japan. P. Z. Jouy.
Length 128 to 180 mm. 4 examples. As
Ureneoides taeniopterus.

59672 U.S.N.M. Kochi. Dr. H. M. Smith.
Length 110 mm.

59673 U.S.N.M. Kochi. Dr. H. M. Smith.
Length 132 mm.

59674 U.S.N.M. Matsushima Bay.
Dr. H. M. Smith. Length 77 mm.

71355 U.S.N.M. Kagoshima. Albatross
Collection. Length 169 mm.

71356 U.S.N.M. Shimizu. Albatross
Collection 1906. Length 88 to 116 mm. 8 examples.

71838 U.S.N.M. Raja, Okinawa, Rin
Kiu. Albatross Collection 1906. Length 132 mm.

Depth $3\frac{9}{10}$; head $4\frac{1}{2}$. Snout $3\frac{1}{10}$
 in head; eye $4\frac{1}{2}$, $1\frac{1}{2}$ in snout,
 $1\frac{1}{2}$ in supraorbital part of head;
 maxillary reaches $\frac{1}{3}$ in eye.
 length $1\frac{2}{3}$ in head and exposed;
 interorbital rather low; Gill
 rakers 10 palatines and tongue,
 dentition feeble; cardiform, recurved on jaws, vomer,
 outer enlarged row in jaws;
 scales small cycloid, not
 markedly elongate or enlarged
 along base of dorsal. Transversely
 before bend of lateral line 240
 above, 40 below; transversely
 above anal origin 30 above, 33
 below.

D. V, 50, origin over hind
 edge of orbit, continuous; A. II, 24,
 origin below 33rd dorsal ray;
 pectoral $1\frac{9}{10}$ in head; vent rays
 18; ventral rays I, 5, fin $1\frac{2}{3}$ in
 head.

Slate blue, with numerous small black
 spots, fins dark blue, with thin light edge to anal.
 length 410 mm. (*Deraniyagala*)
 Maldives, Polynesia, Laysan. Also in the Atlantic.